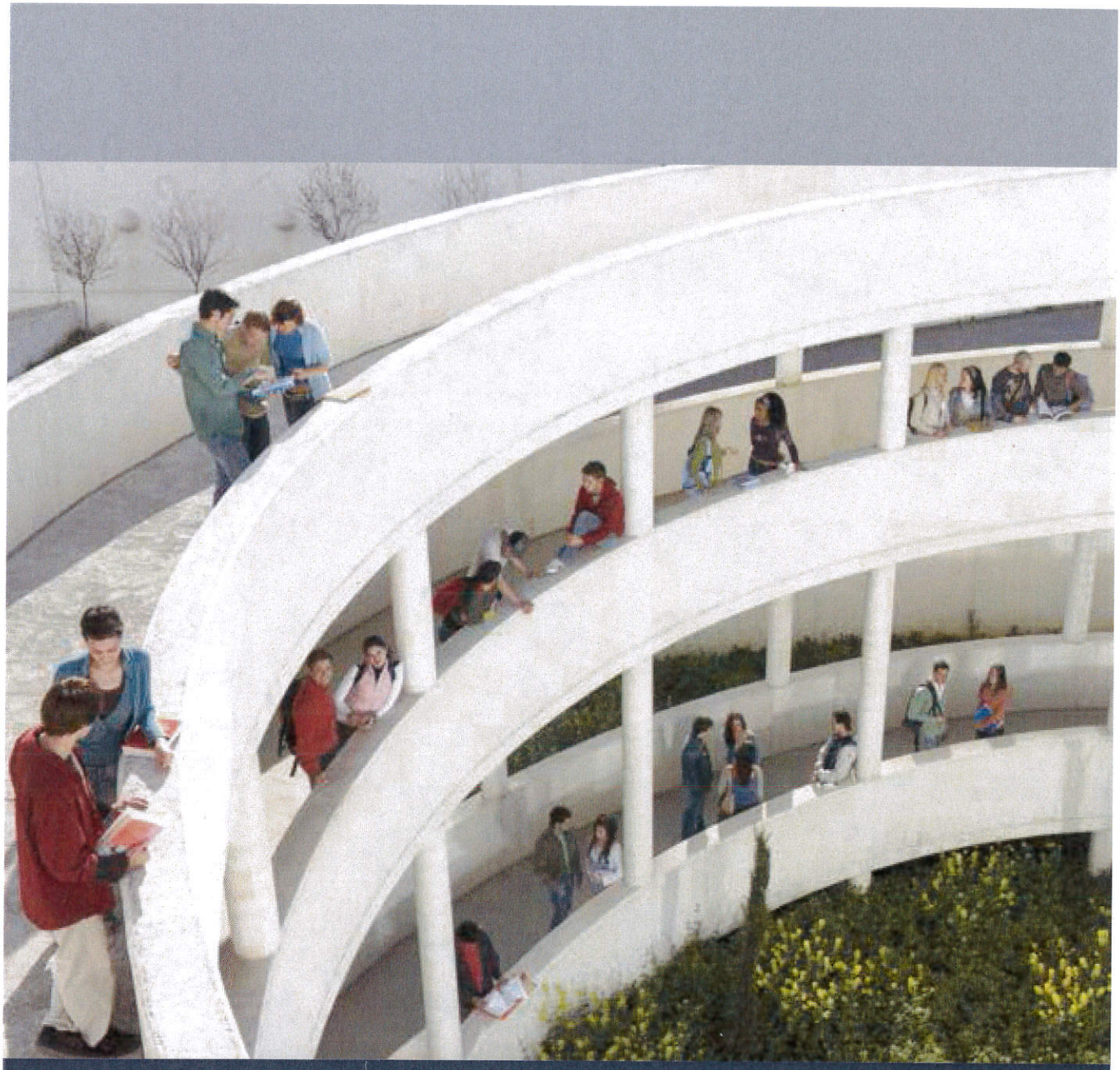

Does Federal Financial Aid Drive Up College Prices?

American Council on Education™
Leadership and Advocacy

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I. Introduction

In 1987, then U.S. secretary of education William Bennett authored an op-ed piece in *The New York Times* titled "Our Greedy Colleges." In the piece, Bennett complained about a comment made by Benno C. Schmidt Jr., then the president of Yale University (CT), who had blamed Yale's tuition hike on cutbacks in federal financial aid. Bennett responded by writing, "If anything, increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would help cushion the increase" (Bennett, 1987, p. A31). The theory behind Bennett's assertion is relatively simple: The availability of federal loans—particularly subsidized loans offering a below-market interest rate and payment of interest as long as the student is enrolled in school—provides "cover" for colleges to raise their prices, because students can offset a price increase, or at least a portion of that increase, with federal loans.

This one sentence became perhaps the one thing for which Bennett is best known, and it is commonly referred to as the "Bennett Hypothesis." A Google web search of the terms "Bennett hypothesis," "tuition," and "financial aid" provides more than 100,000 results. Over the 25 years since he wrote the op-ed, however, people have misremembered the specifics of both his words and his intent. Bennett was speaking only about the impact of federal subsidized loans on college tuition prices, not about all federal financial aid, let alone all financial aid from all sources. In addition, Bennett was cautious in not implying that federal loan subsidies were the only or even the primary driver of tuition price increases, stating, "Federal student aid policies do not cause college price inflation, but there is little doubt that they help make it possible" (p. A31). While being somewhat cautious, he does leave the reader with the impression that there is some causal linkage between federal subsidized loans and increasing tuition prices.

But over the years, people have reinterpreted the Bennett Hypothesis more broadly, in terms of both the scope and the strength of the relationship between financial aid increases and tuition increases. Numerous stories in the media, as well as monographs, journal articles, book chapters, and policy briefings, describe the Bennett Hypothesis either directly or indirectly. A smaller number of these research studies then proceed to empirically test

It was the passage of the Higher Education Act of 1965, however, that first authorized broad-based loan and grant programs. Federal subsidized loans began almost immediately after passage of the act and, beginning with its 1972 reauthorization, federal grants became available. Both the loans and grants were targeted at students with financial need, with the goal of helping to eliminate price barriers for those who were unable to afford to attend college.

Over the ensuing five decades, the federal student financial aid programs, collectively known as the Title IV programs (as they are authorized under Title IV of the Higher Education Act), have grown to the point that today they help millions of students each year to pay for college. Table 1 shows the percentage of undergraduate students receiving federal grants and loans in the 1995–96 and 2007–08 academic years.[1] By the latter year, almost half of all full-time undergraduates were borrowing in the federal student loan programs, and one-third received federal grants.

Table 1: Percentage of undergraduate students receiving federal grants and loans

	1995-96		2007-08	
	All students	Full-time students	All students	Full-time students
Grants	22.2%	30.3%	27.6%	33%
Loans	25.6%	43.6%	34.7%	49.1%

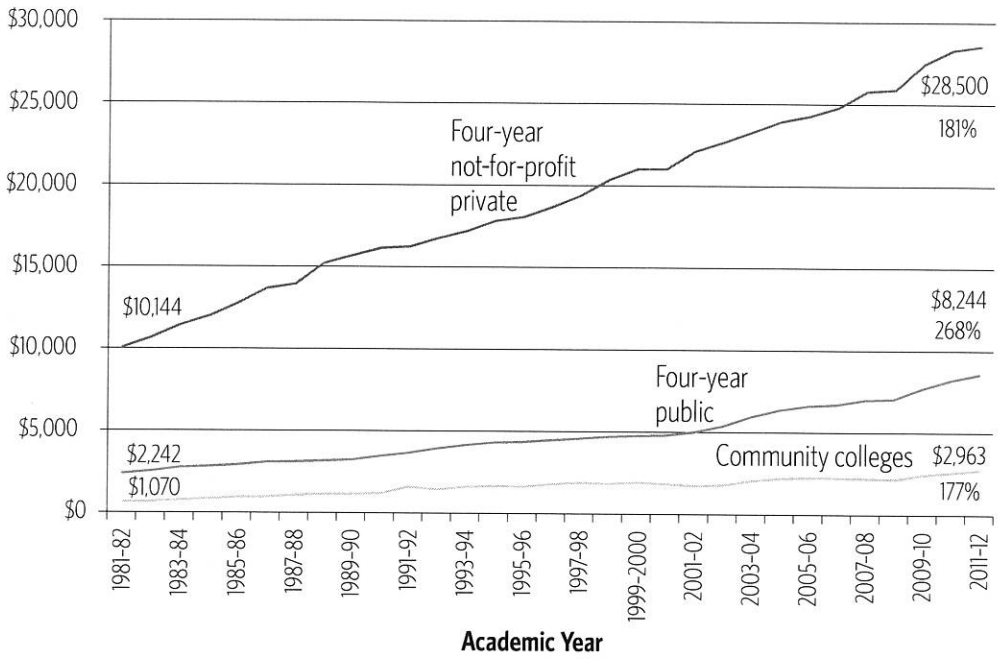
Source: V. Bersudskaya & C. Chang Wei. (2011). *Trends in Student Financing of Undergraduate Education: Selected Years, 1995-96 to 2007-08.*

Since the economic recession that hit the United States in late 2007, federal financial aid has grown even further. The College Board (2011b) reported that in the 2010–11 academic year, 9.1 million students received Pell grants, representing 36 percent of all undergraduates that year, an increase from the 25 percent three years earlier in 2007–08.[2] The percentage of undergraduate students borrowing did

[1] Federal loans are also provided to graduate and professional students, but as the Bennett Hypothesis has been applied almost exclusively to undergraduate tuition increases, the focus of this report is on undergraduates only.

[2] Analysis of the proportion of undergraduates receiving Pell grants was done by the author. The sources for this analysis were the U.S. Department of Education's *2010-2011 Federal Pell Grant Program End-of-Year Report* and the 2007 and 2010 Integrated Postsecondary Education Data System (IPEDS) 12-month enrollment surveys.

Figure 1: Changes in annual tuition prices in constant (2011) dollars, 1981 to 2011



Source: College Board. (2011). *Trends in College Pricing: 2011.*

Higher education institutions are complex, often multibillion-dollar institutions, and numerous factors go into the setting of tuition prices at both public and private institutions. However, as stated in the literature cited above, as well as in other sources, there are a number of factors that most analysts agree have helped contribute to these increases, as well as to price increases in almost every other sector of the economy:

- Higher education has always been, and continues to be, a very labor-intensive industry. While technology has been widely embraced in colleges and universities, in most cases the use of technology has enhanced the instructional experience, but not fundamentally changed the educational production function. Much of the labor employed by universities is highly skilled and highly compensated, including benefits packages that are quite generous compared with those received in many other industries.
- Higher education institutions tend to suffer from goal ambiguity, in that their complex missions of teaching, research, and service lack easily identifiable outcomes that can be objectively measured. This absence of clear, measurable goals ham-

institutions rose, on average, 232 and 52 percent, respectively, beyond inflation. Net prices, however, grew by 30 percent or less in each of the two sectors. While net prices did increase faster than inflation during this period, the rise in net prices was smaller—and in the case of public institutions, much smaller—than the rise in sticker prices.

Table 2: Change in average sticker and annual net tuition prices at four-year public and private, not-for-profit colleges and universities in constant (2011) dollars, 1996 to 2011

	Sticker prices			Net Prices		
	1996-97	2011-12	Change	1996-97	2011-12	Change
Public	$2,480	$8,244	232%	$1,910	$2,490	30%
Private	$18,700	$28,500	52%	$10,630	$12,970	22%

Note: Net prices are calculated after all grant aid, tax credits, and tax deductions have been applied.
Source: Author's calculations from College Board (2011), *Trends in College Pricing: 2011.*

Economic theory regarding tuition prices and financial aid

Economists describe two types of price inflation: cost-push and demand-pull inflation (Samuelson, 1976). Cost-push inflation results when the underlying prices of goods rise and there are no suitable substitute goods or services. Demand-pull inflation exists when there is an excess of demand and supply remains largely inelastic, or unresponsive, to the increase in demand.

The increase in college and university prices outlined above, much of which was the result of cost-push inflationary pressures, could not have been sustained without an increase in demand for higher education. The increase in the college premium over the last few decades—the additional earnings of college graduates as compared with the earnings of high school graduates—has been well documented (Heller, 2011; Kane & Rouse, 1995; Levy & Murnane, 1992; Murnane, Willett, & Levy, 1995; Murphy & Welch, 1992; Zucker & Dawson, 2001). More and more high school graduates, as well as adult workers with low levels of educational attainment, have noted the college wage premium and have responded by enrolling in postsecondary educational institutions.

The higher education industry in the United States responded to the increased demand by expanding the number of seats available, but not at a rate concomitant with the need. Because higher

given the market supply and demand before the increase in the college wage premium.

Curve D_1 is the demand for higher education as influenced by the increasing wage premium; at each price point, more students choose to enroll in college. The new equilibrium point is at the higher price P_1 and the increased enrollment Q_1. Due to the relatively inelastic supply of higher education, the proportional increase in price is greater than the enrollment increase. This is borne out by the data: Between 1981 and 2009, total undergraduate enrollment in the nation increased 68 percent (Snyder & Dillow, 2012, table 214). Tuition prices (in current dollars) increased by more than 500 percent in four-year public and not-for-profit private institutions, as well as in community colleges. In the absence of such a demand shift, higher education institutions would not have been able to raise prices to such an extent over the last two decades *and* increase enrollments as they did.

III. The Research on Financial Aid and Tuition Prices

There have been a large number of research studies on tuition prices over the years, with most of these focusing on the impact that rising prices have on college enrollment, persistence, and degree attainment.[6] Other studies, as described earlier, have focused on the overall determinants of the tuition price increases we have seen in recent years. Far fewer studies have focused on the role that federal financial aid may play in affecting price increases, and the results of these studies will be summarized in this section. The focus is on empirical research addressing the issue.[7]

One of the first studies to attempt to test the Bennett Hypothesis was conducted by economists Michael S. McPherson and Morton Owen Schapiro (1991). Using institutional data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) for the years from 1978 to 1985, they examined the relationship between a number of factors—including federal aid—and

[6] For summaries of this research over the years, see Heller (1997), Jackson and Weathersby (1975), Kim (2010), and Leslie and Brinkman (1988).

[7] Some policy think tanks have issued reports on the Bennett Hypothesis that do not include rigorous, empirical research to test it. For example, one report from the Cato Institute (Wolfram, 2005), a libertarian-oriented center, relied on its author's experiences as a trustee at a private college. Another, from the Center for College Affordability and Productivity (Gillen, 2012), is a theoretical analysis of the Bennett Hypothesis.

from all degree-granting, accredited postsecondary institutions, and data from the academic years 1988–89 to 1997–98 were analyzed. The report also included a review of the prior literature.

In order to examine whether the determinants of tuition price increases differ across different types of institutions, the study ran separate multivariate models for seven college sectors: public four-year research/doctoral institutions, public comprehensive institutions, public bachelor's institutions, community colleges, private research/doctoral institutions, private comprehensive institutions, and private bachelor's institutions.[9] It also examined the relationship between tuition price increases and four types of financial aid: federal grants, state grants, institutional grants, and loans.[10]

Across these seven types of institutions, the study found no relationship between either federal or state grant aid, or loans, and tuition price increases:

> *Regarding the relation [sic] between financial aid and tuition, the regression models found no associations between most of the aid packaging variables (federal grants, state grants, and loans) and changes in tuition in either the public or private not-for-profit sectors (Cunningham et al., 2001a, p. 133).*

The only relationship found between financial aid and price increases was for public and private comprehensive institutions, where there was a positive relationship between spending on institutional grants and tuition price increases.

Not surprisingly, in each of the public four-year sectors, the strongest predictor of tuition price increases was the change in revenue from state appropriations; as appropriations increased, tuition price increases were smaller, and as appropriations decreased (or increased more slowly), price increases were greater. At private institutions, tuition price increases were driven primarily by increased costs, including things such as instructional expenditures, faculty salaries, and institutional grant spending. However, price increases at private institutions were also affected by revenues from other sources, including endowment income, gifts, and other grants and contracts.

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[9] For public institutions, the outcome used in the models was the change in tuition for in-state students.

[10] The analyses focused on aid received by first-time, full-time undergraduate students.

maximum Pell grant award available to students each year, rather than the total volume of Pell dollars received in each institution. In addition, the institutions studied included only public flagship universities, so the generalizability to other sectors of higher education is limited.

One more article using IPEDS data (from 2002 through 2007) focused on community colleges. Frederick, Schmidt, and Davis (2012) looked at the relationship between tuition prices and the average federal grant aid received by students at the institution.[11] Like the other studies, this one is limited by its short time horizon and by limited measures of institutional financial behavior. The authors did conclude, however, that "state and college officials do not appear to appropriate increases in Federal student aid or Federal funds" (p. 915).

Economists Robert B. Archibald and David H. Feldman (2011) also tested the Bennett Hypothesis in their book *Why Does College Cost So Much?* by applying a Granger test, which attempts to discern causality between two variables by looking at the temporal relationship between the two. In other words, for one variable to cause a change in a second, there should be discernible pattern of change in the first that consistently causes a subsequent change in the second. Their application of the Granger test found no relationship between increases in the authorized maximum Pell award and tuition at public universities, and found an inverse relationship in private universities, i.e., larger increases in the maximum Pell grant were associated with decreases in tuition at private institutions. The authors concluded, "Our results are not encouraging for the conjecture known as the Bennett Hypothesis."

In a recent analysis that is one of the few empirical analyses of tuition price setting in the for-profit sector, Cellini and Goldin (2012) used data from three states—Florida, Michigan, and Wisconsin—to examine tuition prices in two types of for-profit institutions: those that are accredited by an agency recognized by the U.S. Department of Education, which allows the institution to participate in the federal Title IV programs, and those that are not accredited in this fashion. The authors compared institutions offering similar academic or vocational programs in these two categories (Title IV participating

[11] This study included measures of the average state and institutional grants received by students.

the studies had data that even came close to containing this level of detail.

A second major problem with all of these studies is one that economists refer to as "omitted variable bias," or the inability to include in statistical models key predictor or control variables that are related to the outcome of interest. The student-level data noted above would need to be combined with accurate, institution-level information about all of the expense and revenue categories in colleges and universities that help inform the decisions institutions make when they set tuition prices.

Without accurate data it is impossible to accurately model, or even approximate, what the true supply and demand curves are for an institution, or a group of institutions, as shown in Figure 2. Without the ability to discern the supply and demand, it is difficult to determine with any degree of certainty how an external shock to the system—such as an increase in Pell grant awards—would affect the equilibrium point of the higher education market, and thus, what the impact would be on tuition prices and the number of students who enroll.

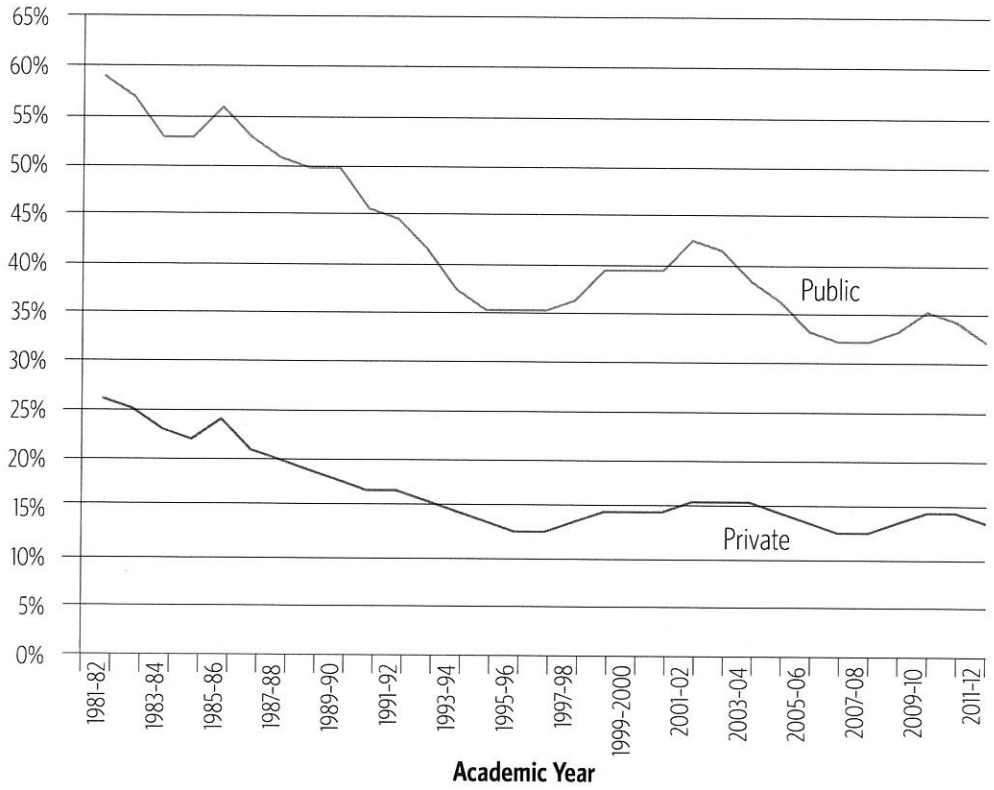
The reality is that the setting of tuition prices is a multifaceted exercise. At private colleges and universities, the boards of trustees generally set the tuition price each year, and they use a variety of data in making their decision, including:

- Recent years' financial results;
- Projections of future expenses;
- Projections of future revenue streams, including the availability of state and federal financial aid;
- Estimates of enrollment demand;
- A review of competitors' past price-setting and enrollment actions and estimates of future such actions; and
- An analysis of the political environment.[12]

Each of these components of the tuition-setting process will carry different weight in a given year; in some years, the actions of competitors may have more influence over the tuition rate that is set. In other years, projections of future expenses may be more of a determinant.

[12] See Clotfelter (1996), Ehrenberg (2000), and Feerrar (2005) for explanations of this process.

Figure 3: Maximum Pell grant award amounts as a percentage of average annual tuition, fees, and room-and-board charges at four-year institutions



Source: Author's calculations from College Board (2011), *Trends in College Pricing: 2011* and *Trends in Student Aid: 2011.*

One may question why the studies described in section three focused primarily on the relationship between federal grants and tuition prices, but not federal loans. After all, former secretary Bennett singled out federal loan subsidies as the culprit behind tuition increases. But while loans (both federal and private) are often considered financial aid, their role is very different from that of grants. While grants provide an actual cash discount to the amount that students have to pay to attend college, loans instead have the purpose of allowing students to postpone when they pay for college. And depending upon the loan terms, including interest rates, origination fees, and repayment term, a loan can increase the cost of attending college. An apt analogy can be made between student loans and car loans. Nobody thinks of a car loan as a discount to the price of the car; it simply makes the purchase more affordable by stretching

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